

AMENDMENTS

IN THE CLAIMS

1. **(Previously Presented)** An isolated polynucleotide molecule comprising:
a nucleotide sequence encoding exon 1d of the human vitamin D receptor (VDR) gene, or a complement thereof.
2. **(Previously Presented)** A polynucleotide molecule according to claim 1, wherein said nucleotide sequence further comprises:
 - i) a nucleotide sequence encoding an amino acid sequence of exon 1b, or a complement thereof;
 - ii) a nucleotide sequence encoding an amino acid sequence of exon 1c, or a complement thereof;or
iii) a nucleotide sequence comprising i) and ii).
3. **(Previously Presented)** A polynucleotide molecule according to claim 1, wherein the nucleotide sequence includes, from 5' to 3':
 - (i) a sequence encoding an amino acid sequence of exons 1d, 1c and 2-9 so as to encode a VDR isoform of approximately 477 amino acids, or a complement thereof;
 - (ii) a sequence encoding an amino acid sequence of exons 1d and 2-9 so as to encode a VDR isoform of approximately 450 amino acids, or a complement thereof; or
 - (iii) a sequence encoding an amino acid sequence of exons 1d and 2-9 and further includes a 152bp intronic sequence so as to encode a truncated VDR isoform of approximately 72 amino acids, or a complement thereof.
4. **(Previously Presented)** A polynucleotide molecule according to claim 1, wherein the polynucleotide comprises a nucleotide sequence encoding an amino acid sequence encoded by SEQ ID NO:2, SEQ ID NO:3 or SEQ ID NO:4, or a complementary sequence thereof.
5. – 8. **(Canceled)**

9. **(Previously Presented)** A plasmid or expression vector comprising a polynucleotide molecule according to claim 1.

10. **(Original)** A host cell transformed with a polynucleotide molecule according to claim 1 or a plasmid or expression vector according to claim 9.

11. **(Original)** A host cell according to claim 10, wherein the cell is a mammalian cell.

12. **(Original)** A host cell according to claim 10, wherein the cell is a NIH 3T3 or COS 7 cell.

13. **(Currently Amended)** A method of producing a ~~VDR or VDR isoform~~ polypeptide comprising exon 1 d of a human vitamin D receptor (VDR), the method comprising:

culturing a host cell of claim 10 under conditions enabling the expression of the polynucleotide molecule to produce a polypeptide comprising exon 1d the VDR or VDR isoform polypeptide and, optionally, recovering the ~~VDR or VDR isoform~~ polypeptide .

14. **(Currently Amended)** A method according to claim 13, wherein the ~~VDR or VDR isoform~~ polypeptide is expressed onto the host cell membrane or ~~other~~ a sub-cellular compartment.

15. – 18. **(Canceled)**

19. **(Currently Amended)** An oligonucleotide or polynucleotide probe comprising a nucleotide sequence of 10 or more consecutive nucleotides of a nucleotide sequence having greater than 75% sequence identity to a polynucleotide encoding MEWRNKKRSDWLSMVLRTAGVE (SEQ ID NO:21), or a complement thereof ~~the nucleotide sequence of any one of claims 21-24 or 28.~~

20. **(Currently Amended)** An antisense polynucleotide molecule comprising a nucleotide sequence having greater than 75% sequence identity to a complement of a polynucleotide encoding MEWRNKKRSDWLSMVLRTAGVE (SEQ ID NO:21).

~~the nucleotide sequence of any one of claims 21-24 or 28.~~

21. **(Previously Presented)** An isolated polynucleotide molecule comprising a nucleotide sequence having greater than 75% sequence identity to a polynucleotide encoding MEWRNKKRSDWLSMVLRTAGVE (SEQ ID NO:21), or a complement thereof.

22. **(Previously Presented)** An isolated polynucleotide molecule comprising a nucleotide sequence having greater than 85% sequence identity to a polynucleotide encoding MEWRNKKRSDWLSMVLRTAGVE (SEQ ID NO:21), or a complement thereof.

23. **(Previously Presented)** An isolated polynucleotide molecule comprising a nucleotide sequence having greater than 95% sequence identity to a polynucleotide encoding MEWRNKKRSDWLSMVLRTAGVE (SEQ ID NO:21), or a complement thereof.

24. **(Previously Presented)** An isolated polynucleotide molecule comprising a nucleotide sequence of

5'GTTTCCTTCTTCTGTCGGGGCGCCTTGGCATGGAGTGGAGGAATAAGAAAAGGAGCGATTGGCTGTTCGATGGTGCTCAGAACTGCTGGAGTGGAGG3' (SEQ ID NO:1), or a complement thereof.

25. – 26. **(Canceled)**

27. **(Previously Presented)** An isolated polynucleotide molecule comprising a nucleotide sequence of nucleotide residues 30-95 of SEQ ID NO:1, or a complement thereof.

28. **(Previously Presented)** An isolated polynucleotide molecule encoding a human vitamin D receptor (hVDR) isoform, said polynucleotide molecule comprising a nucleotide sequence encoding the amino acid sequence MEWRNKKRSDWLSMVLRTAGVE (SEQ ID NO:21), or a complement thereof.

29. **(Canceled)**

30. **(Previously Presented)** A plasmid or expression vector including a polynucleotide molecule according to claim 21, 22, 23, 24, 27 or 28.

31. **(Previously Presented)** A recombinant host cell containing a polynucleotide molecule according to claim 21, 22, 23, 24, 27 or 28.

32. **(Previously Presented)** A recombinant host cell containing a plasmid or expression vector according to claim 30.

33. **(Previously Presented)** A host cell according to claim 32, wherein the cell is a mammalian cell.

34. **(Previously Presented)** A host cell according to claim 32, wherein the cell is a NIH 3T3 or COS 7 cell.

35. **(Previously Presented)** A method of producing a VDR or VDR isoform polypeptide-comprising

culturing a host cell comprising a plasmid or expression vector comprising a polynucleotide molecule encoding a human vitamin D receptor (VDR) or VDR isoform, said polynucleotide comprising the nucleotide sequence of a polynucleotide according to claim 21, 22, 23, 24, or 28, said culturing being under conditions enabling the expression of the VDR or VDR isoform and, optionally, recovering the VDR or VDR isoform polypeptide.

36. **(Previously Presented)** A method according to claim 35, wherein the VDR or VDR isoform polypeptide is expressed onto the host cell membrane or other sub-cellular compartment.

37. **(Previously Presented)** A polynucleotide molecule according to claim 21, wherein said nucleotide sequence further comprises:

- i) a nucleotide sequence encoding an amino acid sequence of exon 1b of the human vitamin D receptor (VDR) isoform, or a complement thereof;
- ii) a nucleotide sequence encoding an amino acid sequence of exon 1c of the human VDR isoform, or a complement thereof; or
- iii) a nucleotide sequence comprising i) and ii).

38. **(Previously Presented)** A polynucleotide molecule according to claim 21, wherein the nucleotide sequence comprises, from 5' to 3':

- (i) a sequence encoding an amino acid sequence of exons 1d, 1c and 2-9 of the human vitamin D receptor (VDR) isoform so as to encode a VDR isoform of approximately 477 amino acids, or a complement thereof,
- (ii) a sequence encoding an amino acid sequence of exons 1d and 2-9 or the human VDR isoform so as to encode a VDR isoform of approximately 450 amino acids, or a complement thereof, or
- (iii) a sequence encoding an amino acid sequence of exons 1d and 2-9 of the human VDR isoform and further includes a 152bp intronic sequence so as to encode a truncated VDR isoform of approximately 72 amino acids, or a complement thereof.

39. **(Previously Presented)** A polynucleotide molecule according to claim 22, 23, or 24, wherein said nucleotide sequence further comprises:

- i) a nucleotide sequence encoding an amino acid sequence of exon 1b of the human vitamin D receptor (VDR) isoform, or a complement thereof;
- ii) a nucleotide sequence encoding an amino acid sequence of exon 1c of the human VDR isoform, or a complement thereof; or
- iii) a nucleotide sequence comprising i) and ii).

40. **(Previously Presented)** A polynucleotide molecule according to claim 22, 23, or 24, wherein the nucleotide sequence comprises, from 5' to 3':

- (i) a sequence encoding an amino acid sequence of exons 1d, 1c and 2-9 of the human vitamin D receptor (VDR) isoform so as to encode a VDR isoform of approximately 477 amino acids, or a complement thereof,
- (ii) a sequence encoding an amino acid sequence of exons 1d and 2-9 or the human VDR isoform so as to encode a VDR isoform of approximately 450 amino acids, or a complement thereof, or
- (iii) a sequence encoding an amino acid sequence of exons 1d and 2-9 of the human VDR isoform and further includes a 152bp intronic sequence so as to encode a truncated VDR isoform of approximately 72 amino acids, or a complement thereof.

41. **(New)** An oligonucleotide or polynucleotide probe comprising a nucleotide sequence of 10 or more consecutive nucleotides of a nucleotide sequence having greater than 85% sequence identity to a

polynucleotide encoding MEWRNKKRSDWLSMVLRTAGVE (SEQ ID NO:21), or a complement thereof.

42. (New) An oligonucleotide or polynucleotide probe comprising a nucleotide sequence of 10 or more consecutive nucleotides of a nucleotide sequence having greater than 95% sequence identity to a polynucleotide encoding MEWRNKKRSDWLSMVLRTAGVE (SEQ ID NO:21), or a complement thereof.

43. (New) An oligonucleotide or polynucleotide probe comprising a nucleotide sequence of 10 or more consecutive nucleotides of a nucleotide sequence of

5'GTTTCCTTCTTCTGTCGGGGCGCCTTGGCATGGAGTGGAGGAATAAGAAAAGGAG
CGATTGGCTGTTCGATGGTGCTCAGAACTGCTGGAGTGGAGG3' (SEQ ID NO:1), or a
complement thereof.

44. (New) An oligonucleotide or polynucleotide probe comprising a nucleotide sequence of 10 or more consecutive nucleotides of a nucleotide sequence encoding MEWRNKKRSDWLSMVLRTAGVE (SEQ ID NO:21), or a complement thereof.

45. (New) An antisense polynucleotide molecule comprising a nucleotide sequence having greater than 85% sequence identity to a complement of a polynucleotide encoding MEWRNKKRSDWLSMVLRTAGVE (SEQ ID NO:21).

46. (New) An antisense polynucleotide molecule comprising a nucleotide sequence having greater than 95% sequence identity to a complement of a polynucleotide encoding MEWRNKKRSDWLSMVLRTAGVE (SEQ ID NO:21).

47. (New) An antisense polynucleotide molecule a nucleotide sequence complementary to a nucleotide sequence of

5'GTTTCCTTCTTCTGTCGGGGCGCCTTGGCATGGAGTGGAGGAATAAGAAAAGGAG
CGATTGGCTGTTCGATGGTGCTCAGAACTGCTGGAGTGGAGG3' (SEQ ID NO:1).

48. **(New)** An antisense polynucleotide molecule comprising a nucleotide sequence complementary to a nucleotide sequence encoding MEWRNKKRSDWLSMVLRTAGVE (SEQ ID NO:21).